JETEC TYPE DESIGNATION REGISTRATION FORM

SHUTTER AND TR TUBES

Manufacturer's Designation: BL-310
JETEC Designation: 6593
Manufacturer: Bomec Laboratories, Inc.
Beverly, Massachusetts

December 12, 1956

GENERAL CHARACTERISTICS

The 6593 is a combined broad-band TR tube and shutter for use in X-Band. The shutter mechanism, when closed, insures protection for the receiver crystal from nearby transmitters when the radar set is not in use. When the shutters are open, the TR tube functions normally and provides decoupling of the receiver from a common transmitting and receiving antenna during a period of transmission. It is an integral cavity type. Its operational band is from 8490 to 9578 megacycles per second.

ELECTRICAL DATA - TYPICAL VALUES

TR Tube (with shutters open)

Operational Band
- VSWR 1.9 maximum 8490 to 9578 Mc/s.
- VSWR 1.6 maximum 8565 to 9487 Mc/s.
Ignitor Ignition Time (max.) 5 sec.
Ignitor Voltage Drop at li = 100 uAdc. 200 to 375 Vdc.
Spike Leakage Energy (max.)
- F = 9000 Mc; po = 40 kw;
- tp1 = 1.0 us; tp2 = 0.5 us;
- pr = 1000 pps; li = 100 uAdc.
- 0.30 ergs.
Flat Leakage Power (max.) 30 mw.
(See Spike Leakage Energy for test conditions)
Insertion Loss (max.) at F = 9000 Mc and li = 0 0.7 db.
Ignitor Interaction (max.) at li = 100 uAdc. 0.3 db.
Position of Short 0.025 to 0.039 inches
(Measured from face of input flange of the tube. Short is further from the magnetron.)
Recovery Time at 200 kw peak, 3 db down 8 us. (max.)

from JETEC release #1873, March 18, 1957
Shutter Tube

Attenuation (shutters closed) 8490 to 9578 Mc/s.  40 db (min.)
Shutter Circuit Voltage 28 Vdc
Shutter Circuit Pull-In Current 110 mA (min.)
Shutter Circuit Holding Current 60 mA (min.)

MECHANICAL DATA - GENERAL

Mounting Position Any
Weight, approximately 1/4 lb.

ABSOLUTE MAXIMUM RATINGS

Transmitter Peak Power (TR Tube) Note 1 1000 kw.
Transmitter Average Power 1000 W
Ignitor Current 200 mA (min.)
Shutter Holding Current 160 mA (min.)

OUTLINE DRAWING

As per attached drawing dated 12/14/56

Note 1: The shutters are not intended for applications involving switching of peak power greater than one kilowatt. Therefore the rating applies only when the shutters are either open or closed.
Note: Exhaust stem not to extend beyond flange more than 1/8".